X

PROGRESS REPORT

OF

THE FOREST SURVEY BRANCH

FOR

1884-85:

BY

W. H. REYNOLDS, ESQUIRE,

OFFICIATING SUPERINTENDENT OF FOREST SURVEYS.

WITH REMARKS BY THE SURVEYOR GENERAL OF INDIA,

AND

WITH THE ORDERS OF THE GOVERNMENT OF INDIA.

1886.

No. 137 F., dated Calcutta, the 19th February 1886.

From—A. MACKENZIE, Esq., C.S., Secretary to the Government of India.
To—The Surveyor General of India.

I AM directed to acknowledge the receipt of your letter No. 2754 S., dated the 31st December last, submitting the Annual Progress Report of the Forest Survey Branch for the season of 1884-85.

2. The principal operations were during the year under review still concentrated in Berar, but a commencement was made with the survey of the leased forest areas in Bashahr. A small party was employed to finish up the work in Kumaun and Garhwal, and two Native surveyors were employed, under the direction of the local Officers, on a rough survey of those leased forests in the Chamba State for which a Working-Plan is in course of preparation.

At the request of the Berar Government, and under instructions from the Government of India, the Topographical Survey of the country outside the limits of Forest estates was entrusted to the Forest Survey Branch, in addition to the survey of Forest Reserves, and this arrangement explains the absence of such areas from the specimen sheet attached to the Report under review.

It has also been decided by the Government of India that the survey of the leased forests in Bashahr shall be completed by the Forest Survey Branch; but, in order to prevent any differences arising in future as regards the agency by which proposed surveys shall be undertaken, Local Governments have been directed* to inform the Government of India of their requirements as regards Forest Surveys at least 18 months before the commencement of the survey operations. This will allow ample time for the Inspector General of Forests to consult with you as regards the agency by which the proposed survey shall be undertaken. In the same way it is advisable that the Inspector General of Forests should be informed of all surveys proposed to be undertaken by the Survey Department, in order to enable him to ascertain and to point out to you the requirements of the Forest Department.

* Circular Resolution of the Home Department, No. 2 F., dated the 26th January 1886.

3. The outturn of the field work in the year under notice amounts to 410 square miles of plane-table work, against 74 square miles during the previous year. 1,017 square miles were triangulated and 168 square miles were traversed. The cost of the survey in Berar, estimated on the total area plane-tabled, amounts to Rs. 78 per square mile for the work done on the scale of 4″=1 mile, and to Rs. 57 on the 2″ scale. This includes the cost of close triangulation, the traversing of all main streams, roads, and forest boundaries, the determining of numerous heights above the sea level, and the measuring of true level contours at 300 feet apart, as well as various other details. The sheets attached to the Report are specimens of excellent mapping; the outturn of the work is satisfactory and the cost moderate. I am, however, to state that an expression of your opinion on these purely professional points would have been desirable.

The photozincography and publication of the maps were, as previously, done by the Trigonometrical Branch of the Surveyor General's Department.

4. The expenditure during the year amounted to :—

	Rs.
Chargeable against Imperial Revenues	19,823
Ditto Berar do.	34,804
TOTAL .	54,627

against Rs. 48,156 in the previous year.

No. 138 F.

COPY, with copy of the Report, forwarded to the Inspector General of Forests to the Government of India for information and for communication to the Superintendent of Forest Surveys.

No. 139 F.

COPY, with copy of the Report, forwarded to the Government of the North-Western Provinces and Oudh for information.

No. 140 F.

COPY, with copy of the Report, forwarded to the Revenue and Agricultural Department for information.

Government of India Central Printing Office—No 792 H D.—26-2 86.—254.

Exd.—A. R. M.

PROGRESS REPORT OF THE FOREST SURVEY BRANCH FOR 1884-85.

No. 2754—S., dated the 31st December 1885.

From—Colonel G. C. DePrée, S.C., Surveyor General of India.

To—The Secretary to the Government of India, Revenue and Agricultural Department.

I have the honour to carry out the instructions of the Government of India, contained in Home Department letter No. 696 F., dated the 28th August 1883, by submitting the annual Report of the Survey Branch of the Forest Department for the season 1884-85.

2. Having so lately expressed my views regarding the procedure adopted in the Hill States Forest Survey about Simla, which I deem to be contrary to good policy (*vide* my letter No. 908—S.-S., dated 21st September 1885), and having shown that the survey of the Melghát taluk of Berar is not confined to Forest limits, but is practically a cadastral work, as it embraces (1) a survey of boundaries of villages, (2) of individual holdings in each village, (3) together with a record of rights, to which is added a topographical survey with a preparation of records of (a) cultivation, (b) cultivable, (c) waste, besides (d) of forest growth, nothing more remains for me to say. I may however point out that no forests whatever exist in the specimen sheet attached to Mr. Reynolds' Report, referring to the villages of Gowlkhera and Silona of Berar, and that only on the north side is there any indication of the existence of any such growth. The map therefore is the product of a purely topographical survey with the additions not in any way appertaining to a Forest Survey already noticed.

3. I also venture to point out that there would appear to be in contemplation a large extension of training of Foresters in surveying (*vide* paragraph 18 of Mr. Reynolds' Report).

4. I have to state that I have not visited the Offices of the Survey Branch of the Forest Department during the year under report, having lately satisfied myself of the accuracy and methodical procedure of the Branch.

5. I regret that Mr. Reynolds should have acquired an impression that I have inconsiderately dealt with his Traverse Indicator. I think I have somewhere explained that this Indicator, both in name and in the manner of manipulating it, is an adaptation of a labour-saving scale introduced by myself some years ago. Rather than throwing any obstacle in the way of using the Indicator, his pattern has been freely reproduced for him by the Dehra Photozincographic Office, and I have, both by departmental order and by personal instruction to officers and men during my tours of inspection, urged the necessity of the general introduction of the scale. It is now in course of practical trial, but is considered to be defective in exactitude, and therefore incapable of supplanting the mathematically accurate and simple figure calculation of traverses. The Indicator therefore, although suitable for small scale maps of 4 inches to a mile, will not suffice for maps on the larger scale of 16 inches. As the original Indicator was roughly drawn and copied by photozincography, I caused a copy thereof to be engraved on copper in the best

and most refined style of art, and have added some improvements, such as suggested themselves to experienced officers of this Department. The new edition has lately been published, and I trust that it will be found useful in the Forest Survey Branch Office. I attach a specimen of the engraved scale.

No. 35—16-1 (Surveys), dated the 12th January 1886.

Endorsed by the Revenue and Agricultural Department.

Transferred to the Home Department (Forest Branch) for disposal.

Annual Progress Report of the Forest Survey Branch of the Forest Department, from the 1st October 1884 to the 30th September 1885, by W. H. REYNOLDS, Esq., F. R. G. S., *Officiating Superintendent of Forest Surveys; dated 26th November 1885.*

THE SEASON'S FIELD WORK.

The operations of the Forest Surveys during 1884-85 were throughout the year under the charge of Mr. W. H. Reynolds, Officiating Superintendent of the Survey Branch. Field work was carried on in the Melghát Taluk and in District Buldana of Berar, as well as in the Ganges Division of the Central Forest Circle of the North-Western Provinces. When the field season was well advanced, the Government of India, Home Department, in letter No. 416 F., dated 8th May 1885, to the Punjab Government, sanctioned the survey of the Bashahr Forests, and a triangulating party was at once deputed to the Sutlej Valley. The triangulation of the Bashahr forests was commenced about the middle of May.

Melghát, Berar.

2. The Melghát party which recessed at Chikalda took the field on the 1st November. It was, for plane-table purposes, divided into two sections, each consisting of a European Assistant and several Native Surveyors. Both sections worked under the immediate supervision of the Officiating Superintendent. The party was strengthened by a third section from South Berar early in April, and the field season was brought to a close on the bursting of the monsoon early in June. The first section under Mr. Litchfield, Assistant Conservator of Forests, took up the survey of a part of the Gugumal and Bairagarh Reserved forests, as well as part of the Jamgarh and Silona Parganas, whilst the second section under Mr. Chill took up the eastern portion of the Jamgarh Pargana and part of the Bairagarh Forests; the third section under Mr. T. S. Marten surveyed parts of the Bairagarh Forests and Katkumb Pargana. In addition to the three sections of plane-tablers there were also working in the Melghát two parties of triangulators and traversers as well as a computing office. The triangulation and traversing as well as the computations appertaining thereto were done entirely by Native Surveyors, under the personal supervision of Mr. W. H. Reynolds, the Officiating Superintendent. Sufficient country has been triangulated and traversed in advance to provide for next season's plane-table work. The areas topographically surveyed and also those triangulated and traversed up to the close of season 1884-85 are shown on an index map of the Melghát Taluk, which is submitted with this Report.

3. Early in November Mr. T. S. Marten with a party of Native Surveyors was deputed to take up the detailed survey of the Guru-Matergaon forests in South Berar, the boundaries having been surveyed the previous season. He left Dehra on the 1st November and commenced work at Botha on the 9th. This party completed the survey of the Guru-Matergaon forests in the Buldana District on the 8th April, and it was then brought up into the Melghát hills to strengthen the main survey party, and it continued in the field until the 2nd June.

South Berar.

4. A small party of Native Surveyors under Mr. J. Marten was employed in the Ganges Division of the Central Forest Circle of the North-Western Provinces in completing the survey of the forests of Kumaun and Garhwál. The party left Dehra on the 1st November and returned to head-quarters on the 18th March. The tract surveyed is situated between Lachmanghulár and Ghori Ghat on the Ganges. With the exception of some boundaries in the Chandi forests, which were not defined when the Surveyors were on the ground, the survey of the Kumaun and Garhwál forests is now finished.

Kumaun and Garhwál.

5. The two Native Surveyors who were deputed to the Punjab in July 1884 are still employed in Chamba under the local Forest Officer. The survey work for which they were specially deputed will be finished by the close of the year, and they will then return to head-quarters for employment elsewhere.

Chamba, Punjab.

6. Immediately on receipt of the Government orders sanctioning the survey of the Bashahr Forests, a triangulating party was deputed to the Sutlej valley to commence the work. The party arrived in Bashahr about the middle of May, and was still in the field at the close of the survey year (30th September). The tract triangulated to date is situated in the Upper Sutlej valley between Tangi and Sarham, and it provides an ample area for next season's plane-table work. Accompanying is an index map of Bashahr, which shows the area already triangulated as well as the area flagged in advance for triangulation. The area flagged will be triangulated before the end of November 1885.

Bashahr, Punjab.

7. A summary of the outturn of field work will be found in Appendix A. The area plane-tabled on the scale of 4″=1 mile was 203 and on the scale of 2″=1 mile 208 square miles, making a total area of 411 square miles as the season's outturn. The areas are distributed as follows :— On the 4″ scale Kumaun and Garhwál 34·75 square miles, in the Melghát 91·18 square miles, in South Berar 77·12 square miles, and on the 2″ scale in the Melghát 207·43 square miles. The area plane-tabled in—

Abstract of field work. Plane-tabling.

		Square miles.
1880-81	was	260
1881-82	„	265
1882-83	„	361
1884-85	is	411

In 1883-84, with the exception of a small area in the Ganges Division, no plane-tabling was done, as the main party was employed in Berar upon primary work of triangulation, traversing and boundary surveys. The area therefore of detailed survey, *viz.*, 411 square miles, for the season under report, compares most favourably with the outturn of previous years. The average monthly outturn of plane-tabling, by a party of one European and 5 Native Surveyors working in the Melghát, was 25·3 square miles on the scales of 4 and 2 inches to the

mile, as against 13·7 square miles on the 4″ scale in Kumaun and Garhwál in season 1882-83. In South Berar the area turned out, on the scale of 4″=1 mile, in one month, by a party of one European and 4 Native Surveyors, was 17·5 square miles, and in the Ganges Division (Kumaun and Garhwál) one European and 3 Native Surveyors turned out an average monthly area of 8 square miles on the 4″ scale.

Levelled contours and field measurements.

8. In the forests of the Ganges Division in Garhwál the detailed survey was done as usual, but throughout the areas surveyed in the Melghát and in South Berar, in addition to the ordinary plane-table work, true level contour lines were measured with the Tangent scale clinometer, at vertical distances of 300 feet apart in the Melghát and at 200 feet vertical intervals in South Berar, and the intermediate lines, which represent the configuration of the hills on the maps, were surveyed in by eye at 15 and 20 feet distances respectively.

The boundaries of villages and of every individual holding of land in each village in the tract under survey were also carefully surveyed, and record-rights of holders, &c., were kept, which will ultimately, with the maps, be submitted to the Revenue authorities of the District.

A very considerable part of the Melghát Taluk is composed of Reserved Forest areas; in fact the whole of the Melghát is practically a forest Taluk, with the local Forest Officer as Assistant Commissioner. The inhabitants are a wild and a timid race and have dealings with few but the Forest officials, and hence for these reasons as well as others the Local Government deemed it advisable that the survey of the entire Taluk, whether forest or otherwise, should be dealt with by the Forest Department. A map illustrating the subject of this paragraph is attached for reference.

Triangulation.

9. The triangulation extended over 1,017 square miles of difficult country. In the Melghát Taluk of Berar an area of 727 square miles was triangulated, and in the Upper Sutlej Valley in Bashahr the trangulation covered an area of 290 square miles, giving in all 910 fixed points, or about one trigonometrical point per square mile.

Traversing.

10. One hundred and twenty-nine linear miles of traversing were run over an area of 168 square miles of country, giving 1,307 fixed stations.

Heights by Tangent scale clinometer.

11. One thousand five hundred and eighty-nine observations were made with the Tangent scale clinometer, to determine the heights of 798 points above sea level.

Forest growth record, &c.

12. In the Forest tracts the Forest growth record has as usual been prepared, and in the tracts beyond forest limits the areas are divided into (a) cultivation, (b) culturable, and (c) waste land.

OFFICE WORK.

Computations.

13. An abstract of the outturn of computations will be found in Appendix (A). The rectangular coordinates of 1,672 traverse stations, situated on 192 linear miles of traversing, were computed in duplicate. The number of triangles worked in duplicate was 1,508, and the number of points fixed thereby is 815. To determine the heights above sea level of 783 points, 1,506 traingles were computed in duplicate. It may here be remarked that the determination of altitudes by means of the

Aneroid Barometer has been abandoned in favour of the Tangent scale clinometer. The computations of triangles and heights of stations above sea level are sufficiently advanced to provide for the coming season's work.

Traverse Indicator.

14. Adverting to paragraph 13 of last year's Progress Report, the Traverse Indicator has, in the Forest Surveys, been made good and full use of, and has answered all the purposes for which it was designed by Mr. Reynolds, the Officiating Superintendent; it saves an immense amount of labour, and, if worked with a detached scale, the results obtainable are as accurate, for all practical survey purposes, as they need be. The Surveyor General of India has recently published a modification of Mr. Reynolds' Traverse Indicator, but it is to be remarked that more than one essential point has been overlooked or omitted which, if retained, would facilitate the working of the Indicator and tend to more accurate results. Had Mr. Reynolds, as the original designer of the Traverse Indicator, been consulted, these omissions need not have occurred. A copy of the original Traverse Indicator is attached to this Report.

Map drawing.

15. An abstract showing the original drawings under preparation during the year will be found in Appendix (B). Of the 12 four-inch sheets of the Kumaun and Garhwál Survey, reported as being in progress last year, Nos. II, XV, XIX, XX, XXXVII, LI, LIX, and LXXIX have been published; sheets Nos. I, XLII and L have also been published. The following four-inch sheets of the Kumaun and Garhwál Forests are now in progress,—Nos. IIIA, III B, IV, V, VII, LXIX, LXX, LXXI, LXXIII, LXXIV, LXXV and LXXVIII; of these LXIX, LXX, LXXI and LXXIV have been sent to press, and the others are all in a very advanced state. The following original drawings are also in progress, viz., Kumaun and Garhwál charts of triangulation on the scale of 1″=1 mile, sheets Nos, I, II, IV, V, VI, VII and VIII (Nos. V and VII have gone to the press); an index chart of Kumaun and Garhwál field sheets on the scale of 1″=4 miles; a map of the Bhagirathi forests in Tiri-Garhwál in three sheets on the scale of 4″=1 mile (sheet No. 1 in the press); a map containing the villages of Gondwihir, Masona, Najarpur, Bhilkhera, and Pandri in the Melghát Taluk, scale 4″= 1 mile (in the press); a map of the Chikalda plateau (including Forest reserve and adjacent villages) on the scale of 4″= 1 mile; sheets Nos. 19 and 20 of the Melghát taluk, on the scale of 2″= 1 mile; a map of the villages of Chachkhera and Kulamgana in the Melghát taluk, on the scale of 4″= 1 mile; and a map in three sheets of the Guru-Matergaon forests in South Berar, scale 4″= 1 mile. The following maps have been received from the press, viz., map of the Dadi and Raiengarh forests, including the forests of Chachpur in the Simla Hill States, on the scale of 2″= 1 mile; map in two sheets of the Deota and Lambatách Forests in Tiri-Garhwál, scale 4″= 1 mile; map of the Dehra Dún, showing forest areas, &c., scale 1″= 4 miles; an index map of the Melghát Taluk, Berar, scale 1″= 8 miles; a map of the Ellichpur Taluk, Berar, showing classification of district forests, &c., on the scale of 1″= 1 mile; an index map of the Bashahr Forest Division, scale 1″= 4 miles; and a map of the villages of Silona and Gowlkhera, in the Melghát Taluk, on the scale of 4″= 1 mile.

Miscellaneous work.

16. For various Forest and District Officers 42 tracings were made, 506 printed maps were coloured, and 352 printed maps were mounted in book form. The areas of the forests in 12 of the Kumaun and Garhwál

printed sheets have been deduced, and the record of forest growth has been added to 9 printed maps. A revision is being made of the lists of all available maps of the Reserved Forests in the various provinces under the Government of India, and a portfolio for each province containing the best available maps is now under preparation.

Maps for Nancy, and London Exhibition of 1886.

17. A set of ten sheets of the Forest Survey maps was sent to the French Forest School at Nancy as specimens, and a set of forest maps is now in course of preparation for the London Exhibition of 1886. The latter set will illustrate the distribution of Forest areas under the heads of (a) Reserved forests, (b) Protected forests, (c) District forests, and (d) other forests in which Government has a proprietary right; it will also contain detailed and special maps of forests in different provinces. These maps, after the close of the Exhibition, will be made over to the Cooper's Hill Forest School.

INSTRUCTION OF STUDENTS OF THE FOREST SCHOOL.

Number of students attending Survey course, and qualifying certificates.

18. Ten students of the Forest School (Forest Ranger's class) were under instruction in practical surveying during the field season, having undergone a theoretical course (including plan-drawing and the use of instruments) during the rains or recess months when field work was impracticable; of these 10 men, 8 passed the final examination test and were awarded certificates of qualification in surveying by the lower standard, as laid down in paragraph 50 (2nd Edition) of the Forest Department Code. The two men who failed will join the 1st year's students in the coming field season, and will go through the practical course again. Three Foresters also went through a course of surveying, but were not considered qualified to receive certificates; these men will also go through the practical course again.

Forty-one students of the first year's class of 1885 (Probationers and Forest Rangers, including a Sub-Assistant Conservator of Forests) attended the surveying classes during the recess of 1885. They were put through a course of plan-drawing and theoretical instruction, including the use of mathematical instruments, &c., and at the end of the course they were examined and awarded marks according to their qualifications; these students during the coming field season will go through a course of practical surveying in the Kalesar Forests of the Punjab. In addition to the 41 students of the Probationer's and Ranger's class, 10 students of the Forester's class will also attend the course of practical surveying in the Kalesar Forests.

Orders of Government to survey Kalesar Forests.

19. The sanction for the survey of the Kalesar Forests was conveyed in correspondence, ending with Government of India, Home Department, endorsement No. 904 F., dated the 14th September 1885. The same orders placed the services of Mr. Copeland, Assistant Conservator of Forests on the Punjab list, at the disposal of the Superintendent of Forest Surveys, for a period of three months, to assist in the instruction of the Forest School students. This survey was sanctioned more particularly as a training ground in surveying for the Forest School students.

EXPENDITURE.

Imperial expenditure during survey year.

20. Appendix (C) gives the expenditure for the year on field and office work in the Kumaun and Garhwál Survey, in Jaunsar, in the Bhagirathi valley, and in the Bashahr survey, as well as charges for work not connected with these surveys. The cost of the field work in the

Kumaun and Garhwál Survey was Rs. 2,430, and of the office work Rs. 2,299. In Jaunsar Rs. 611 were expended chiefly in preparing fair maps for the press, and the Bhagirathi expenditure of Rs. 784 was due to the same cause. In the Bashahr survey Rs. 738 were expended on triangulation. The total expenditure of Imperial funds on field and office work, including all charges, was Rs. 16,650.

Final cost of Kumaun and Garhwál Survey.

21. The survey of the Kumaun and Garhwál Forests, which extend from Hurdwar on the Ganges to Barmdeo on the Nipal frontier, is now completed, and the average cost of the work per square mile from start to finish, including all charges, is Rs. 115. This figure includes the cost of a considerable amount of boundary and road survey work, which was done from time to time subsequently to the completion of the ordinary survey, and against which no area can be shewn, but which nevertheless materially tends to increase the cost rate of the work. The average cost per square mile up to the end of last survey year (30th September 1884) was Rs. 113; the slight increase in the average cost this year is chiefly due to the very small area surveyed in Kumaun and Garhwál, and to a proportionately larger expenditure on office work in bringing up the final map drawing.

Berar expenditure during survey year.

22. The expenditure on field and office work of the Berar survey, as well as other charges on miscellaneous expenditure, will be found in Appendix (D). The total cost of the field and office work in the Melghát Taluk and in South Berar, including all expenditure, was Rs. 25,157, and the cost per square mile of the season's work, estimated on the total area plane-tabled, was, on the scale of 4″=1 mile, Rs. 78, and on the 2″ scale, Rs. 57. This figure, it is satisfactory to note, compares very favourably with the cost rate of the Kumaun and Garhwál Surveys, the final average cost of which is Rs. 115 per square mile. The total expenditure in Berar during the survey year ending 30th September 1885, including all charges, was Rs. 43,409.

Details included in cost of work.

23. The Melghát now under survey is the most northern taluk of the Berar Province, and is situated in the Satpura range of hills which rise to an elevation of 4,000 feet above sea level. This tract is notably unhealthy, and during the hot months there is a very great scarcity of water; added to this, coolie labor is very difficult to procure, as the local "Kurkus," or wild inhabitants of the hills, will not take service, and this increases the difficulties and cost of surveying. By strict economy the cost of the survey has been kept at a low figure, and it is possible that the cost rate per square mile may yet be reduced to a still lower figure. Comparisons of the respective figures of costs of different surveys are not unfrequently quoted; such quotations however are extremely misleading, unless the figures of cost are supported by other essential details of the work and the nature of the country dealt with. As this is the first year that a cost rate is reported for Berar, it might be noted that the rate quoted in the previous paragraph, viz., Rs. 78 per square mile on the 4″ scale and Rs. 57 per square mile on the 2″ scale, includes the cost of very close triangulation, of not less than one trigonometrical point per square mile, and the traversing of all main streams, roads, and forest boundaries, &c., in a difficult mountainous and broken country, as well as the determining of heights above sea level of all trigonometrical stations, passes, prominent peaks, stream beds, camps, &c.; it also includes cost of a minute forest plane-table survey, the preparation of forest growth records, the measuring of true level contours with the Tangent scale clinometer at vertical distances of 300 feet apart

(which for the first time have been added to Forest maps), and, on the village tracts adjoining the forest areas, the measuring of village and field boundaries, as well as the keeping of the record rights of holders. This figure of cost also includes the cost of all computations connected with the work, such as computations of triangles, the conversion of spherical into rectangular co-ordinates, heights above sea level, traversing, &c., &c., as well as the drawing of the fair maps for publication and the deduction of areas. The reproduction by photozincography of the fair maps is not included in the cost; this is kindly done for us by the Trigonometrical Branch of the Surveyor General's Department. If a comparison of cost (as was done recently) is to be drawn with other Surveys, and to be of any value, it ought to be shewn that the comparative cost includes all the details noted above, and that the work is done in the same minute detail as the Forest Surveys, also that equal difficulties have been encountered, and that the final results and maps are of equal quality.

OFFICERS OF THE SUPERIOR STAFF.

Mr. W. H. Reynolds, Officiating Superintendent of Forest Surveys.

24. Mr. W. H. Reynolds, Officiating Superintendent of Forest Surveys, held charge of the Forest Survey Branch throughout the year. After starting the Kumaun and Garhwál survey party and arranging the work at the head-quarters office at Dehra, Mr. Reynolds, on the 10th November, left for Berar and arrived at Chikalda on the 17th. After arranging the field work of the Melghát parties, he visited the South Berar party and spent three days on Mr. T. S. Marten's work; he then returned to the Melghát, and personally conducted the work of the main party until the close of the field season. On the 27th June he started for Dehra, but, at the request of the Inspector General of Forests, he took Simla *en route* and discussed some important questions with the head of the Department. He arrived at Dehra on the 10th July.

Mr. E. F. Litchfield, Assistant Conservator of Forests.

25. Mr. Litchfield, Assistant Conservator of Forests, took the field on the 1st November, and was employed throughout the field season on plane-tabling. During the early part of the season he worked chiefly in the Chikalda Forest reserve and country adjoining, and later on he worked in the Gugumal Forest reserve and the Jamgarh Pargana; he finished his season's work on the 20th June and returned to Chikalda, the head-quarters of the Berar Survey; from the 28th June to 13th August he was on privilege leave. He has suffered much from ill health throughout the year, but more particularly during the early part of the field season, and hence his outturn of work in November and December was small; but, as the season advanced, he made better progress, and finally he turned out a satisfactory season's work. If his health does not improve, he may be obliged to take sick leave. During the recess months, Mr. Litchfield was employed in drawing the fair maps of his season's field work, and he also took charge of the Chikalda drawing office when Mr. Reynolds left for Dehra. He has not completed the fair drawing of his season's field work, but this is due to his having been on six weeks' privilege leave. Mr. Litchfield is a very neat draughtsman and a good plane-tabler, and when in good health turns out ample and excellent work.

FOREST SURVEYORS.

Mr. G. P. Chill.

26. Mr. Chill was employed throughout the field season on plane-tabling. He marched from Chikalda on the 1st November, and during the early part of the season worked-in Pargana Silona in sheets

Nos. 19 and 20; later on he took up work in the Bairagarh Reserve forests and adjacent country; he closed work on the 7th June and returned to head-quarters. He was on privilege leave from the 18th August to the 30th September, and during the balance of the recess months he was engaged in drawing the fair maps of his field-work. Mr. Chill is a very good draughtsman, and although he is somewhat slow, yet he is painstaking and reliable; but he often neglects minor details outside his actual plane-table work, and hence there is a want of finish about his field sheets. He is also rather hasty with natives at times.

Mr. T. S. Marten.

27. Mr. T. S. Marten started from head-quarters on the 1st November, and began plane-tabling in South Berar on the 9th November. He continued to work in the Guru-Matergaon Forest Reserve until the 8th April; he then joined the main survey party in the Melghát on the 13th April, and continued plane-tabling in the Bairagarh Forest Reserve and Katkumb Pargana until the close of the season. He returned to head-quarters at Chikalda on the 2nd June. Mr. T. S. Marten is a neat draughtsman and a good field surveyor, and can work well when he likes. He was employed during the recess months in drawing the three fair sheets of the Guru-Matergaon Forests.

Mr. James Marten.

28. Mr. James Marten left Dehra on the 1st November and commenced plane-tabling in the Ganges Forests on the 7th November; he continued to work in the forests of the Ganges Division throughout the field season, and returned to recess quarters on the 18th March on completion of his work. In addition to his field work, he also put ten of the Forest School students through a two months' course of practical surveying, which he did satisfactorily. His outturn of field work was small, but this is due chiefly to part of his time having been devoted to the tuition of Forest students, and to the field season being a comparatively short one. During the recess months he was employed in drawing the fair maps of the Kumaun and Garhwál Forests, as well as those of the Bhagirathi Valley. Mr. James Marten is very steady, and is a good and neat workman.

Prospects of Forest Surveyors.

29. A proposal has recently been before Government to improve the prospects of Forest Surveyors, but, owing to financial pressure, the proposal has for the present been held in abeyance. Something undoubtedly ought to be done to improve the prospects of this hard-working class of Forest Surveyors.

SUB-SURVEYORS.

30. The average monthly strength of the Native Establishment employed on each kind of work during the field season was—

Triangulation	2
Traversing	1
Plotting, &c.	2½
Computing	5
Plane-tabling	15
In field ...	25½
At head-quarters ...	6½
Total ...	32

The Native establishment has on the whole worked well, and many of the men have become expert surveyors; those who deserve special mention for their good work are Salig Ram, Badri Dutt, and Bhoop Singh.

Health of Establishment.

31. The Melghát taluk of Berar which is now under survey is notably an unhealthy tract, and consequently the establishment, both European and Native, suffered much from fever; during the early part of the field season (November and December) so many of the men were disabled that the survey work at one time was almost at a standstill. The South Berar party also suffered much from fever.

WORK DONE BY THE SURVEY OF INDIA FOR THE FOREST SURVEYS.

32. The Officiating Superintendent of Forest Surveys has much pleasure in acknowledging the advantage he has received owing to the courtesy of the Deputy Surveyor General of the Trigonometrical Surveys, in whose Office the Forest Survey maps have been photo-zincographed, and other printing of a miscellaneous nature has been done.

33. The following documents are submitted with this Report—

(1.) Chart illustrating the progress of work in the Melghát Taluk.

(2.) Chart illustrating the progress of work in Bashahr.

(3.) Specimen map of the Berar Survey.

(4.) Traverse Indicator.

(5.) Appendix (A)—Summary of outturn of field work and computations.

(6.) Appendix (B)—Summary of outturn of drawing and miscellaneous work.

(7.) Appendix (C)—Summary of expenditure from 1st October 1884 to 30th September 1885, showing the amounts expended on Field and Office work (Imperial).

(8.) Appendix (D)—Summary of expenditure from 1st October 1884 to 30th September 1885, showing the amounts expended on Field and Office work (Berar).

(9.) Annual Form No. 53—Summary of Revenue and Expenditure (Imperial Surveys) during the financial year.

(10.) Annual Form No. 53—Summary of Revenue and Expenditure (Berar Surveys) during the financial year.

(11.) Annual Form No. 54—Account Current.

(12.) Annual Form No. 55—Outstandings and Liabilities.

(13.) Annual Form No. 56—Revenue received and Outstandings on account of Revenue (Imperial).

(14.) Annual Form No. 56—Revenue received and Outstandings on account of Revenue (Berar).

APPENDICES.

APPENDIX A.

Summary of outturn of Field Work and Computations by the Forest Survey Department from 1st October 1884 to 30th September 1885.

No.	Kamaun, Garhwál, Bashahr and Berar Surveys.		Amount.	Remarks.
	Plane-tabling.			
1	Area plane-tabled on the scale of 4″ = 1 mile—		410·48	Square miles.
	(a) Kumaun and Garhwál	34·75		
	(b) Melghát	91·18		
	(c) South Berar	77·12		
	Area plane-tabled on the scale of 2″ = 1 mile—			
	Melghát	207·43		
	Triangulation.			
2	Area triangulated—		1,017	Ditto.
	(a) Melghát	727		
	(b) Bashahr	290		
3	Number of points fixed—		910	
	(a) Melghát	678		
	(b) Bashahr	232		
	Traversing.			
4	Area traversed—			
	Melghát		168	Ditto.
5	Number of linear miles traversed—			
	Melghát		129¼	
6	Number of traverse stations—		1,307	
	(a) Melghát	946		
	(b) South Berar	361		
	Computations.			
7	Number of linear miles of traversing in duplicate—		192¼	
	(a) Melghát	129¼		
	(b) South Berar	63		
8	Number of traverse stations computed in duplicate (rectangular co-ordinate)		1,672	
9	Number of triangles worked in duplicate—			
	Melghát		1,508	

No.	Kumaun, Garhwál, Bashahr, and Berar Surveys.	Amount.	Remarks.
	Computations.—(Continued).		
10	Number of points fixed thereby—		
	Melghát	815	
11	Number of triangles worked in duplicate to determine heights—		
	Melghát	1,506	
12	Number of points of which the heights were determined thereby—		
	(a) Melghát 673	783	
	(b) Kumaun and Garhwál 110		
13	Number of Tangent scale clinometer observations—		
	(a) Melghát 937	1,589	
	(b) South Berar 572		
	(c) Kumaun and Garhwál 80		
14	Number of heights determined by Tangent scale clinometer—		
	(a) Melghát 483	798	
	(b) South Berar 283		
	(c) Kumaun and Garhwál 32		

APPENDIX B.

Summary of Outturn of Drawing and Miscellaneous Work executed by the Forest Survey Department from 1st October 1884 to 30th September 1885.

No.	Particulars.	Number of Sheets.	Remarks.
	Original drawings.		
1	Kumaun and Garhwál Sheets, scale 4″ = 1 mile (in progress), Nos. IIIA, IIIB., IV, V, VII, LXIX, LXX, LXXI, LXXIII, LXXIV, LXXV, LXXVIII. (Nos. LXIX, LXX, LXXI, LXXIV, sent to press.)	12	
2	Chart of Kumaun and Garhwál Triangulation, scale 1″ = 1 mile (in progress), Nos. I, II, IV, V, VI, VII, VIII. (Nos. V and VII sent to press.)	7	
3	Index Chart of field sheets of Kumaun and Garhwál Survey, scale 1″ = 4 miles (in progress).	1	
4	Maps of the Bhagirathi Forests, in Tiri-Garhwál, scale 4″ = 1 mile, Nos. I, II, and III. (No. I, sent to press.)	3	
5	Map of Dadi and Raiengarh Forests, including the forest of Chachpur, scale 2″ = 1 mile (published).	1	
6	Maps of Deota and Lambatach Forests in Tiri-Garhwál, scale 4″ = 1 mile, Nos. I and II (published).	2	
7	Map of the Dehra Dún Division, showing forest areas, scale 1″ = 4 miles (published).	1	
8	Map of Ellichpur Taluk, Berar, showing classification of District forests, scale 1″ = 1 mile (published).	1	
9	Index map of the Melghát, Berar, scale 1″ = 8 miles (published).	1	
10	Map containing the villages of Silona and Gowlkhera in the Melghát Taluk, Berar, scale 4″ = 1 mile (published).	1	
11	Map containing the villages of Gondwahir, Masona, Najarpur, Bhilkhera and Pandri in the Melghát Taluk, Berar, scale 4″ = 1 mile (sent to press).	1	
12	Map of the Chikalda plateau (including Forest reserves and adjacent villages), scale 4″ = 1 mile (in progress).	1	
13	Map of the Melghát Taluk, Berar, Sheets Nos. 19 and 20, scale 2″ = 1 mile (in progress).	1	
14	Map containing the villages of Chachkhera and Kulamgana in the Melghát Taluk, Berar, scale 4″ = 1 mile (in progress).	1	
15	Maps of South Berar, showing Guru-Matergaon Forest, scale 4″ = 1 mile, Nos. 1, 2 and 3 (in progress).	3	
16	Index map of Bashahr Forests, scale 1″ = 4 miles (published)	1	
	Tracings made.		
17	Tracings made for various Forest and District officers ...	42	
	Maps coloured.		
18	Printed maps of various kinds coloured	506	
	Mounted maps.		
19	Printed maps mounted in book form	352	

No.	Particulars.	Number of Sheets.	Remarks.
	Area of forest measured.		
20	Area in Kumaun and Garhwál Forests, measured from the Kumaun and Garhwál Forest Survey, Sheets Nos. XII, XV, XVI, XX, XXVII, XXXVI, XXXVII, XXXVIII, LXIV, LXV, LXVI and LXXII.	12	
	Record of Forest growth.		
21	Kumaun and Garhwál Forest Survey, Sheets Nos. I, II, XV, L and LXXVII.	9	In duplicate (except No. L).

APPENDIX C.

Summary of Expenditure from 1st October 1884 to 30th September 1885, showing the amounts expended on Field and Office work of the Forest Surveys (Imperial).

No.	Months.	Kumaun and Garhwal.		Jaunsar.		Bhagirathi.		Bashahr.		General.	Total.	Remarks.
		Field.	Office.	Field.	Office.	Field.	Office.	Field.	Office.			
		Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	
1	October 1884	...	768	...	300	...	...	...	...	1,117	2,185	
2	November „	...	782	...	311	...	...	...	...	882	1,975	
3	December „	482	...	...	...	...	...	...	...	623	1,105	
4	January 1885	590	88	...	...	...	...	...	...	598	1,276	
5	February „	545	166	...	...	...	...	...	...	796	1,507	
6	March „	540	90	...	...	...	...	...	...	1,034	1,664	
7	April „	273	112	...	...	...	84	...	...	595	1,064	
8	May „	...	103	...	...	...	200	...	...	552	855	
9	June „	...	...	...	...	...	...	...	...	376	376	
10	July „	...	83	...	...	...	300	381	...	1,396	2,160	
11	August „	...	50	...	...	...	100	175	...	947	1,272	
12	September „	...	57	...	...	...	100	182	...	872	1,211	
	Total ...	2,430	2,299	...	611	...	784	738	...	9,788	16,650	

APPENDIX D.

Summary of Expenditure from 1st October 1884 to 30th September 1885, showing the amounts expended on Field and Office work of the Forest Surveys (Berar).

No.	Months.	Field.	Office.	General.	Total.	Remarks.
		Rs.	Rs.	Rs.	Rs.	
1	October 1884 ...	...	365	1,364	1,729	
2	November „ ...	70	381	1,203	1,654	
3	December „ ...	1,643	423	1,887	3,953	
4	January 1885 ...	2,936	365	2,550	5,851	
5	February „ ...	3,319	321	1,050	4,690	
6	March „ ...	2,584	227	1,514	4,325	
7	April „ ...	3,083	185	1,257	4,525	
8	May „ ...	3,084	236	1,199	4,519	
9	June „ ...	2,565	191	1,152	3,908	
10	July „ ...	1,095	595	2,554	4,244	
11	August „ ...	...	826	1,171	1,997	
12	September „ ...	...	663	1,351	2,014	
	Total ...	20,379	4,778	18,252	43,409	

ANNUAL FORM No. 53 [*Prescribed*].

Summary of Revenue and Expenditure of the Forest Survey Branch (Imperial) during 1884-85.

Budget Heads.	Direction.
Receipts.	Rs. As. P.
I.—Timber and other Produce removed from the Forests by Government Agency :—	
a. Timber	.....
b. Firewood and Charcoal	.....
c. Bamboos	.....
d. Sandal-wood	.....
e. Grass and other Minor Produce	.....
II.—Timber and other Produce removed from the Forests by Consumers or Purchasers :—	
a. Timber	.....
b. Firewood and Charcoal	.....
c. Bamboos	.....
d. Grasing and Fodder Grass	.....
e. Other Minor Produce	.....
III.—Confiscated Drift and Waif Wood	.....
IV.—Revenue from Forests not managed by Government :—	
a. Duty on Foreign Timber and other Forest Produce ...	.....
b. Revenue from Shared and Private Forests	.....
V.—Miscellaneous :—	
a. Fines and Forfeitures	.....
b. Refunds	...
c. Other Sources	234 0 0
Total Receipts ...	234 0 0
Expenditure.	
A.—Conservancy and Works.	
I.—Timber and other Produce removed from the Forests by Government Agency :—	
a. Timber	.....
b. Firewood and Charcoal	.....
c. Bamboos	.....
d. Sandal-wood	.....
e. Grass and other Minor Produce	.....
II.—Timber and other Produce removed from the Forests by Consumers or Purchasers	.....
III.—Confiscated Drift and Waif Wood	.....
IV.—Revenue from Forests not managed by Government :—	
a. Duty on Foreign Timber and other Forest Produce ...	.....
b. Revenue from Shared and Private Forests	.....
V.—Rent of leased Forests, and Payments to Shareholders in Forests managed by Government	.....
VI.—Live Stock, Stores, Tools and Plant :—	
a. Purchase of Cattle	.....
b. Feed and keep of Cattle	715 1 7
c. Stores, Tools and Plant	214 8 0
VII.—Communications and Buildings :—	
a. Roads and Bridges	.....
b. Buildings	.....
c. Other Works	.....
VIII.—Demarcation, Improvement and Extension of Forests :—	
a. Demarcation	.....
b. Compensation for Land and Rights	.....
c. Surveys and Working-Plans	2,110 2 9
d. Plantations	...
e. Protection from Fire	.....
f. Other Works	.....
Carried over ...	3,039 12 4

ANNUAL FORM No. 53 [*Prescribed*]—contd.

Summary of Revenue and Expenditure of the Forest Survey Branch (Imperial) during 1884-85.

Budget Heads.	Direction.
	Rs. As. P.
A.—Conservancy and Works—*concld.*	
Brought forward ...	3,039 12 4
IX.—Miscellaneous :—	
a. Refunds	.....
b. Law Charges	.....
c. Other Charges	.....
Total A.—Conservancy and Works ...	3,039 12 4
B.—Establishments.	
I.—Salaries :—	
a. Conservators	.....
b. Superior Officers	6,240 0 0
c. Subordinate Forest and Depôt Establishments	8,640 7 1
d. Office Establishments	.....
e. Deputation and Special Allowances	.....
II.—Travelling Allowances :—	
a. Conservators	.....
b. Superior Officers	244 0 0
c. Subordinate Forest and Depôt Establishments	1,072 12 8
d. Office Establishments	.....
III.—Contingencies :—	
a. Stationery	3 12 0
b. Carriage of Tents and Records	79 0 0
c. Rents, Rates and Taxes	.....
d. Pay of Police Guards	.....
e. Official Postage	151 3 0
f. Sundries	352 8 4
Total B., Establishments ...	16,783 11 1
Grand Total of Expenditure ...	19,823 7 5

ANNUAL FORM No. 53.—[*Prescribed*]—contd.

Summary of Revenue and Expenditure of the Forest Survey Branch (Berar) during 1884-85.

Budget Heads.	Direction. Rs.	As.	P.
Receipts.			
I.—Timber and other Produce removed from the Forests by Government Agency :—			
a. Timber	.....		
b. Firewood and Charcoal	.....		
c. Bamboos	.....		
d. Sandal-wood	.....		
e. Grass and other Minor Produce	.....		
II.—Timber and other Produce removed from the Forests by Consumers or Purchasers :—			
a. Timber	.....		
b. Firewood and Charcoal	...		
c. Bamboos	.....		
d. Grazing and Fodder Grass	.....		
e. Other Minor Produce	.....		
III.—Confiscated Drift and Waif Wood	.....		
IV.—Revenue from Forests not managed by Government :—			
a. Duty on Foreign Timber and other Forest Produce ...	.....		
b. Revenue from Shared and Private Forests	.....		
V.—Miscellaneous :—			
a. Fines and Forfeitures	.....		
b. Refunds	100	0	0
c. Other Sources	834	0	0
Total Receipts ..	934	0	0
Expenditure.			
A.—Conservancy and Works.			
I.—Timber and other Produce removed from the Forests by Government Agency :—			
a. Timber	.....		
b. Firewood and Charcoal	.....		
c. Bamboos	.....		
d. Sandal-wood	.....		
e. Grass and other Minor Produce	.....		
II.—Timber and other Produce removed from the Forests by Consumers or Purchasers.	.....		
III.—Confiscated, Drift and Waif Wood.	.....		
IV.—Revenue from Forests not managed by Government :—			
a. Duty on Foreign Timber and other Forest Produce ...	.....		
b. Revenue from Shared and Private Forests ...	.....		
V.—Rent of leased Forests, and Payments to Share-holders in Forests managed by Government.	.....		
VI.—Live Stock, Stores, Tools and Plant :—			
a. Purchase of Cattle	.....		
b. Feed and keep of Cattle	909	3	9
c. Stores, Tools and Plant	1,548	5	0
VII.—Communications and Buildings :—			
a. Roads and Bridges	.....		
b. Buildings	397	15	7
c. Other Works	.....		
VIII.—Demarcation, Improvement and Extension of Forests :—			
a. Demarcation	.....		
b. Compensation for Land and Rights	.....		
c. Surveys and Working Plans	5,017	7	8
d. Plantations	.....		
e. Protection from fire	.....		
f. Other Works	.....		
IX.—Miscellaneous :—			
a. Refunds	.....		
b. Law Charges	.....		
c. Other Charges	.....		
Total, A.—Conservancy and Works ...	7,872	15	10
Carried forward ...	7,872	15	10

ANNUAL FORM No. 53 [*Prescribed*]—concld.

Summary of Revenue and Expenditure of the Forest Survey Branch (Berar) during 1884-85.

Budget Heads.	Direction.
	Rs. As. P.
Brought forward ...	7,872 15 10
Expenditure—*concld.*	
B.—Establishments.	
I.—Salaries :—	
a. Conservators	.....
b. Superior Officers	9,440 0 0
c. Subordinate Forest and Depôt Establishments	9,257 15 7
d. Office Establishments	.....
e. Deputation and Special Allowances	60 0 0
II.—Travelling Allowances :—	
a. Conservators	.....
b. Superior Officers	3,347 0 6
c. Subordinate Forest and Depôt Establishments	2,765 3 11
d. Office Establishments	.....
III.—Contingencies :—	
a. Stationery	1 8 0
b. Carriage of Tents and Records	449 5 7
c. Rents, Rates and Taxes	1,000 0 0
d. Pay of Police Guards	.....
e. Official Postage	117 7 6
f. Sundries	492 8 4
Total, B.—Establishments ...	26,931 1 5
Grand Total of Expenditure ...	34,804 1 3

ANNUAL FORM No. 54 [*Prescribed*].

Account Current of the Forest Survey Branch for the year 1884-85.

Dr.

	Rs. As. P.	Rs. As. P.
To Opening Balance ...	.....	459 15 0
„ Revenue as per details in the Annual Summary ...	.....	234 0 0
Service Funds.		
„ Uncovenanted Service Family Pension Fund, Bengal ..	.....	1,106 8 0
Forest Cash Remittances (Local).		
„ Remittances from State Treasuries	.....	31 0 4
„ Advances Recoverable ...	.....	9,807 7 7
Account Current with other Governments.		
„ Government of North-Western Provinces and Oudh...	.....	*21,065 1 3
„ Government of Punjab ...	.....	623 6 10
Inter-Departmental Transfers.		
Civil Department.		
„ Mathematical Instrument Department	.....	1,090 12 0
Berar Suspense Account.		
„ Revenue from Melghat Taluk	934 0 0	.....
„ Remittances from Ellichpur Treasury	*27,131 3 10	.....
„ Ditto from Buldana Treasury	3,000 13 5	*30,066 1 3
Total ...	.....	65,444 4 3

Cr.

	Rs. As. P.	Rs. As. P.
By expenditure as per Annual Summary	.....	19,823 7 5
„ Advances Recoverable ...	.....	8,344 5 4
„ Suspense	.....	23 0 2
Account Current with other Governments.		
„ Government of Punjab ..	.....	100 0 0
„ Ditto of North-Western Provinces and Oudh ...	.....	1,000 0 0
Inter-Departmental Transfers.		
Civil Department.		
„ Mathematical Instrument Department ...	.....	444 12 0
Berar Suspense Account.		
„ Expenditure for Melghat Survey	34,804 1 3	.....
„ Remittances to Ellichpur Treasury	376 4 0	.....
„ Ditto Chikalda Treasury...	347 0 0	35,527 5 3
„ Closing Balance ...	.....	281 6 1
Total ...	.....	65,444 4 3

* Alterations made—*vide* No. 835, dated 27th July 1885, from the Comptroller and Auditor General (Forests) to the address of the Superintendent of Forest Surveys.

ANNUAL FORM No. 55 [*Prescribed*].

Forest Survey Branch Outstandings and Liabilities on account of Contractors and Disbursers for 1884-85.

Division.	Department Debtor.			Department Creditor.			Balance Due.	
	At commencement of year.	Recoveries in cash and value of supplies and work done during year.	At close of year.	At commencement of year.	Payments made during year.	At close of year.	To Department (Outstandings).	By Department (Liabilities).
	Rs.	Rs. As. P.	Rs. As. P.	Rs. As. P.	Rs. As. P.	Rs. As. P.	Rs. As. P.	
Forest Surveys ...	150	9,867 7 7	10,017 7 7	2,713 7 0	8,244 5 4	10,957 12 4	940 4 9	...
Total ...	150	9,867 7 7	10,017 7 7	2,713 7 0	8,244 5 4	10,957 12 4	940 4 9	...

ANNUAL FORM No. 56 [*Prescribed*].

Forest Survey Branch (Imperial) Revenue received and Outstandings on account of Revenue during 1884-85.

Division.	Particulars.	Outstandings at commencement of year.	Value of sales and other revenue during year.	Total.	Amount realised during year.	Balance due to the Department at end of year.
			Rs. As. P.	Rs. As. P.	Rs. As. P.	
Forest Survey Branch (Imperial).	Miscellaneous Revenue	.....	234 0 0	234 0 0	234 0 0	.....
	Total ...	.....	234 0 0	234 0 0	234 0 0	.....

ANNUAL FORM No. 56 [*Prescribed*].

Forest Survey Branch (Berar) Revenue received and Outstandings on account of Revenue during 1884-85.

Division.	Particulars.	Outstandings at commencement of year.	Value of sales and other revenue during year.	Total.	Amount realised during year.	Balance due to the Department at end of year.
			Rs. As. P.	Rs. As. P.	Rs. As. P.	
Forest Survey Branch (Berar).	Miscellaneous Revenue	.....	934 0 0	934 0 0	934 0 0	.....
	Total ...	.....	934 0 0	934 0 0	934 0 0	.....

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